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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Transmittal for Appeal Brief	Application Number: 10/609046 Filing Date: 06-27-03 First Named Inventor Pinarbasi Group Art Unit 3729 Examiner Tugbang Atty. Docket Num. SJO920000088US2

Commissioner for Patents
By Fax to 571-273-8300

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Attached hereto is a Brief (totaling 6 pages) in support of applicant's appeal to the Board of Patent Appeals and Interferences from the final rejection of applicant's claims by the Examiner in an Office Action dated 04-05-06.

G. Marlin Knight

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Transmission by Fax CERTIFICATE

I hereby certify that the above paper is being transmitted to telephone no. 571-273-8300 on the date indicated below and is addressed to the Commissioner for Patents.

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Commissioner for Patents

1. Real Party in Interest:

As the assignee of all rights in the patent application, the following designates the Real Party in Interest:

HITACHI GLOBAL STORAGE TECHNOLOGIES NETHERLANDS B.V.
Locatellikade 1
Pamassustoren
1076 AZ Amsterdam
The Netherlands

2. Related Appeals and Interferences: None.

3. Status of Claims: The claims in this appeal are claims 1, 6 and 7. Each of these claims has been finally rejected. Claims 2-5 and 8-17 have been withdrawn from consideration because they are to a non-elected invention.

4. Status of Amendments:

All amendments have been entered.

PAGE 2/7 * RCVD AT 8/28/2006 7:08:16 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-2/22 * DNIS:2738300 * CSID:14087152547 * DURATION (mm-ss):04-26

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5. Summary of the Claimed Subject Matter

The claimed invention is a method of fabricating a spin valve type magnetic transducer with multilayered electrically conductive leads. (36A, 36B in Figure 2; 40A, 40B in Figures 3-4) The thin film leads have layers of tantalum (Ta), chromium (Cr) and rhodium (Rh). (Figures 2-4, page 3, lines 3-8). The tantalum pads 37 are formed first in electrical contact with the magnetic sensor 35. The chromium pads 38 are formed on top of the tantalum pads 37. The rhodium pads 39 are formed last. (See Figures 2-4, specification page 4, lines 15-31). The tantalum and chromium layers serve as seed layers for the rhodium layer. (p. 3, lines 6-7). The dual seed layer (Ta/Cr) of the invention significantly improves the conductivity of the rhodium. The Ta/Cr/Rh leads can be used with hard bias structures formed on a PtMn layer 41 without having increased resistance. (Figures 3-4, page 5, lines 11-25). In the embodiment shown in Figure 2 the multilayered electrically conductive leads 36A, 36B are overlaid on opposing sides of the surface of the spin valve 35. (p. 4, lines 15-20).

6. Grounds of Rejection to be Reviewed on Appeal

Whether claims 1, 6 and 7 were properly rejected under section 103(a) as being unpatentable over Pinarbasi 5,883,764 in view of Dates, et al. 3,484,284.

7. Arguments

The Examiner rejected claims 1, 6, and 7 under section 103(a) as being unpatentable over Pinarbasi 5,883,764 in view of Dates, et al. 3,484,284. The Examiner cited Pinarbasi '764 inter alia as disclosing a method of fabricating a spin valve with leads comprising layers of tantalum/chromium/tantalum. The Examiner noted that Pinarbasi '764 differs from the presently claimed invention by using an upper tantalum pad instead of rhodium as claimed.

Dates '284 is cited by the Examiner as teaching that electrical leads can be formed of a conductive material, or electroconductive material, with equivalent materials of rhodium or tantalum for the advantages of providing high power capacity and low contact resistance. The Examiner asserts that it would have been obvious to have substituted rhodium in place of chromium in the structure of Pinarbasi '764. Applicant respectfully disagrees.

Dates is non-analogous art that cannot reasonably be combined with Pinarbasi '764 to make a prima facie case of obviousness. One of ordinary skill in the art of spin valve type magnetic transducers would not look to Dates '284 for a teaching on materials useful in making multilayered leads for a spin valve. Dates' invention is an electroconductive material:

> a finely divided mixture of at least one conductive metal, a substantially non-conducting ceramic or glass, and a semiconductor as desired, together with a suitable moistening agent or vehicle, said non-conducting ceramic or glass comprising not more than 50% by weight of the total remaining after the said moistening agent or vehicle is volatilized through firing. (col. 3, lines 14-22).

Thus, it is clear that Dates '284 is not even remotely dealing with the same subject as Pinarbasi '764 or the present application.

Dates '284 is not a teaching about how to make leads for spin valves. Instead he is teaching the making of a composite electroconductive material to be used in heating elements, resistive coatings, capacitor plates and the like that include among other things. (see Dates' Abstract). For this purpose Dates '284 includes the following laundry list of elements that can be used in his composite material:

> Metals suitable for use in the invention are those metals of the Periodic Table included in period 3, groups 2 and 3, and in periods 4, 5, 'and 6, groups 1b to 6b inclusive, 3a to 6a inclusive, and group 8 but excluding the lanthanum series elements. These metals are aluminum, magnesium, copper, silver, gold, zinc, cadmium, mercury, gallium, indium, thallium, germanium, tin, lead, antimony, bismuth, tellurium, polonium, scandium,

> yttrium, titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten, iron, ruthenium, osmium, cobalt, rhodium, iridium, nickel, palladium, and platinum. The invention, however, is not limited to these metals since mixtures and alloys thereof can also be used. Examples of noble and non-noble metals particularly suitable for use in the invention are silver, gold, platinum, palladium, rhodium, nickel, chromium, cadmium. copper, aluminum and the like. (col. 3, lines 74, through col. 4. line 15).

This list is not put forth as a statement of general equivalence between these elements. Dates is teaching how to make his particular material. On this point Dates' teaching is hardly distinguishable from the periodic table itself. Thus, Dates' teaching would not render obvious the substitution of rhodium for tantalum in a spin value multilayered lead of any kind. The invention claimed herein is not to a single layered lead of rhodium, it is to a multilayered lead with the specific layers of tantalum and chromium under the rhodium. Dates' has absolutely nothing to say about using rhodium in this context.

The Examiner has argued that Dates '284 is properly combinable because the particular problem, as defined by the Examiner, is conductive pads for use in general electrical circuits. The applicant respectfully disagrees. First as noted above, Dates is not teaching rhodium leads or multilayered leads even in a general circuit. Moreover, leads for a thin film spin valve are very specialized and cannot be equated to general conductive leads. The fact that the applicant leads as claimed have three layers reveals that electrical conductivity is only one of many constraints.

It is respectfully submitted that it is only using hindsight provided by the present application that one would assert an equivalence between rhodium and tantalum. Without using the present application as a guide and specifically searching for references that happen to mention electrical conductivity along with tantalum and rhodium, one of ordinary skill in the art would never think to look to Dates '284.

Even if Dates '284 were combined with Pinarbasi '764, the result would not be the applicant's invention. Dates is not teaching the substitution of pure rhodium for pure tantalum. Dates' is teaching a composite material with at least 10% non-conducting ceramic or glass, as well as, a semiconductor material. (Dates col. 3, lines 14-21).

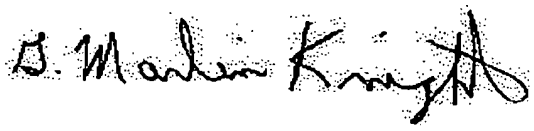
Dates is teaching a material that comprises "a fused mixture of noble and/or non-noble metals, a non-conducting ceramic or glass and as desired a semiconductor such as, tin, oxide, tin-antimony oxide, silicon carbide and the like." (Dates col. 3, lines 50-55). The citation of Dates '284 as teaching the general equivalence of rhodium and tantalum for any purpose is not supportable.

It is respectfully submitted that the foregoing arguments establish that claims 1, 6 and 7 are patentable over the cited references.

Conclusion

Applicant respectfully submits that the foregoing arguments have shown that the references cited in support of the rejections do not, in fact, teach applicant's claimed invention even if combined. Applicant further submits that the motivation to combine the selected features of the references is not present since the references are not analogous. The applicant, therefore, respectfully requests that the rejections be reversed and that the claims be allowed.

Respectfully Submitted,



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8. Appendix of Claims in the Appeal:

1. A method of fabricating a transducer for reading magnetic transitions from a moving magnetic material comprising the steps of:

forming a magnetic sensor which is a spin valve; and

forming first and second leads for the magnetic sensor by:

fabricating first and second thin film tantalum pads in electrical contact with the magnetic sensor at first and second locations, first and second locations being noncontiguous;

fabricating thin film chromium pads on first and second tantalum pads; and

fabricating thin film rhodium pads on the thin film chromium pads.

6. The method of claim 1 wherein the first and second locations are on opposing areas of an upper surface of the magnetic sensor and wherein the first and second tantalum pads are in physical contact with the upper surface of the magnetic sensor.

7. The method of claim 1 further comprising the step of forming first and second hard bias structures disposed on opposing sides of the magnetic sensor and wherein first and second leads are respectively overlaid on first and second hard bias structures and first and second leads extend onto an upper surface of the magnetic sensor and are in physical contact with the upper surface of the magnetic sensor.

9. Evidence Appendix: None

10. Related Proceedings Appendix: None